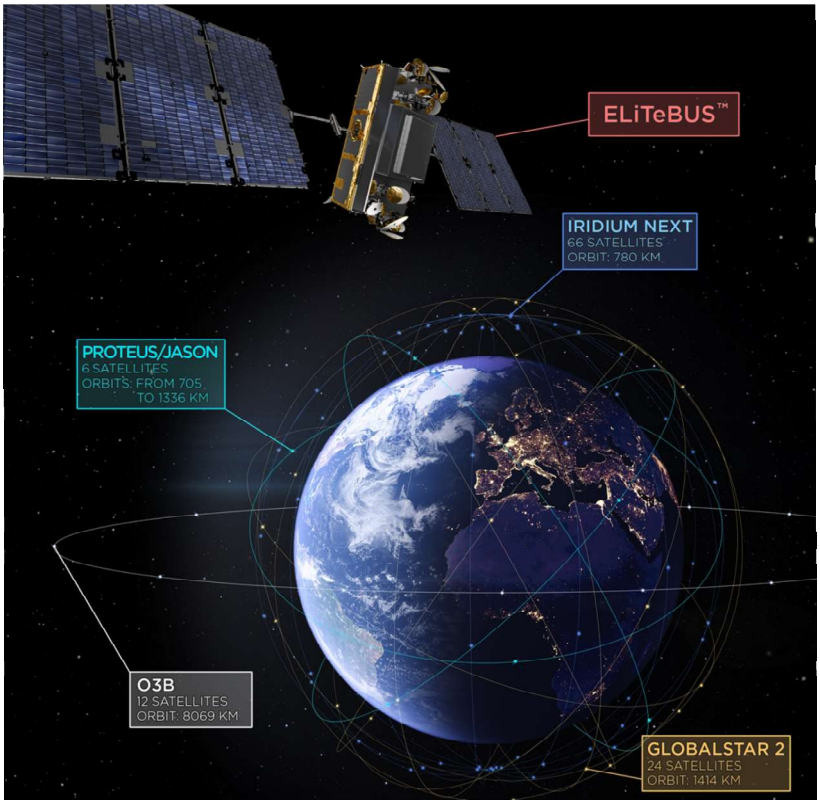
ELiTeBUS™1000

ELiTeBUS™1000 has been built on the PROTEUS platform, that served various radar, altimetry, optical & astronomy missions including CNES-ESA & 3 NASA missions : JASON 1/2/3 – CALIPSO – SMOS – COROT.

It benefits from the merging of Proteus concepts and performance, with design for production demonstrated on Globalstar 1 & 2, O3B and Iridium NEXT



Lifetime : 7 to 12 years according to radiation environment
Bus reliability : > 0.9 @ 12 years

Payload capability :

- Maximum mass : 350 Kg
- Average power :
  - LEO 800 km : 955 W
- Bus Pointing performances :
  - Accuracy : 0.12°
  - Stability : 0.012°/sec
  - Pointing Knowledge : 0.11°

Orbital domains :

- LEO :
  - 400 – 1000 Km inclinations below 40°
  - 400 – 1400 Km inclinations above 40°
- MEO :
  - 7500 – 25000 Km any inclination

Launcher compatibility:

- Vega : 1 satellite
- Soyuz : up to 6 satellites
- Falcon 9 / 9H : up to 10 satellites
- Atlas V 521/531: up to 12 satellites

Existing dispensers:

- Falcon 9
- Soyuz

Maximum launch mass : 860 Kg

Payload Volume under Launcher fairing :
- On bus deck : 2 to 4 m^3
- Inside bus : 0.5 m^3

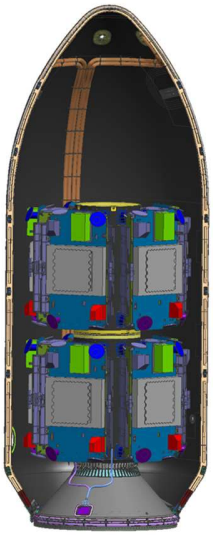
High Power supply:

- Unregulated 28V power bus
- 2 axes Solar Array
- Li-ion battery

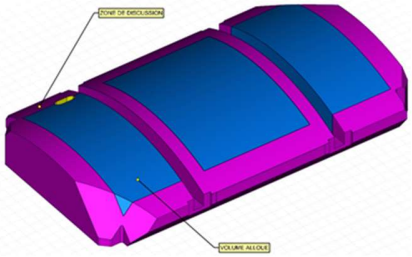
Flight proven avionic architecture:

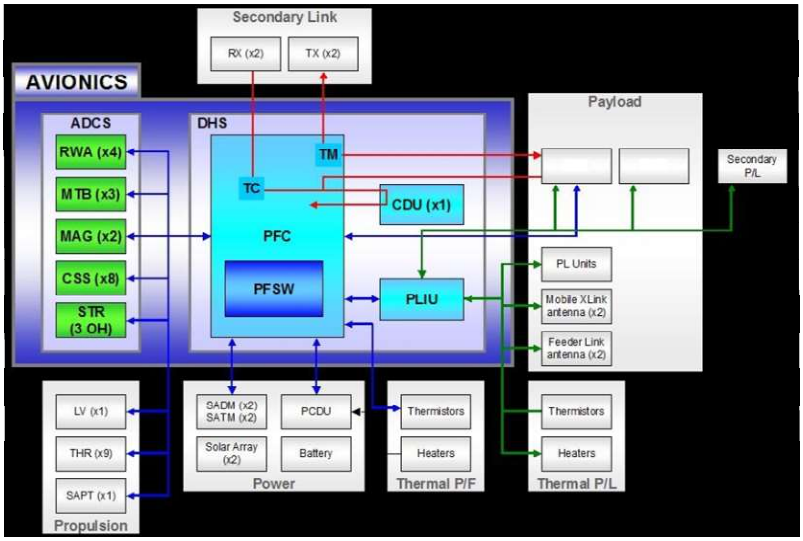
- Large processing resources around LEON 3 processor – 40 Mips
- Space Wire and 1553 data bus
- Star Tracker based AOCS
- 3-axes Reaction Wheel control

Soyuz



Falcon 9





MTB : Magneto Torquer Bar

MAG : Magnetometer

CSS : Coarse Sun Sensor

SADM : Solar Array Drive Mechanism

SATM : Solar Array Tilt Mechanism

RWA : Reaction Wheels

STR : Star Trackers

PFC : Platform Computer

PFSW : Platform Software

PCDU : Power Conditioning and Distribution Unit

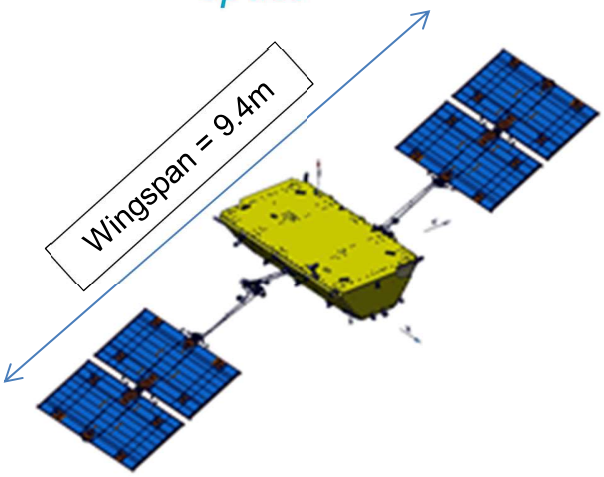
CDU : Command Deciphering Unit

PLIU : Payload Interface Unit

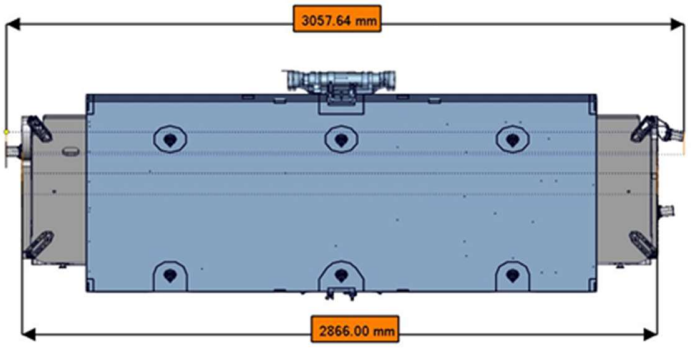
SAPT : Pressure Transducer

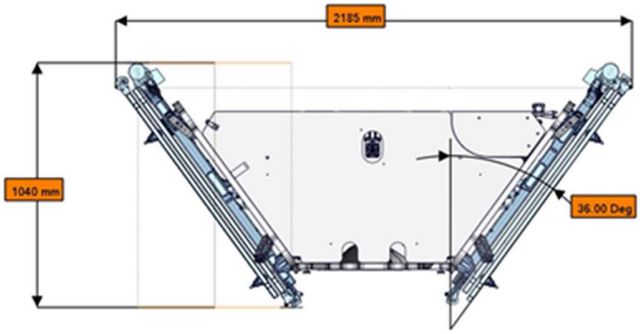
LV : Latch Valves

THR : Thruster



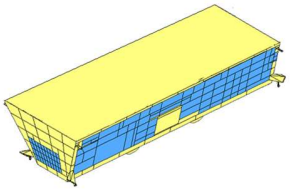
The ELiTeBUS™1000 overall configuration offers wide clearances for platform sensors and large deck for payload accommodation.





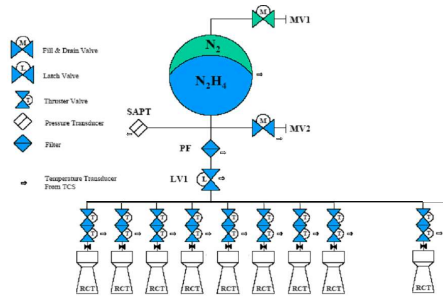
Structure :

The all-aluminum structure is made of panels attached to a tubular frame holding thanks to corner fittings. The frame also supports the brackets hosting the launcher interface locks. The shape of the structure is optimized for compatibility with the widest range of launch vehicle fairings, with a central dispenser and 3, 4 or 5 satellites around it (possibly on several floors). All panels are made of honeycomb sandwich.



Propulsion :

The propulsion is built around a standard hydrazine concept. 164 Kg hydrazine tank provides 380 m/s delta-V required for orbit injection, mission and deorbiting. 9 catalyst thrusters of 1N ensure velocity augmentation.



Thermal Control :

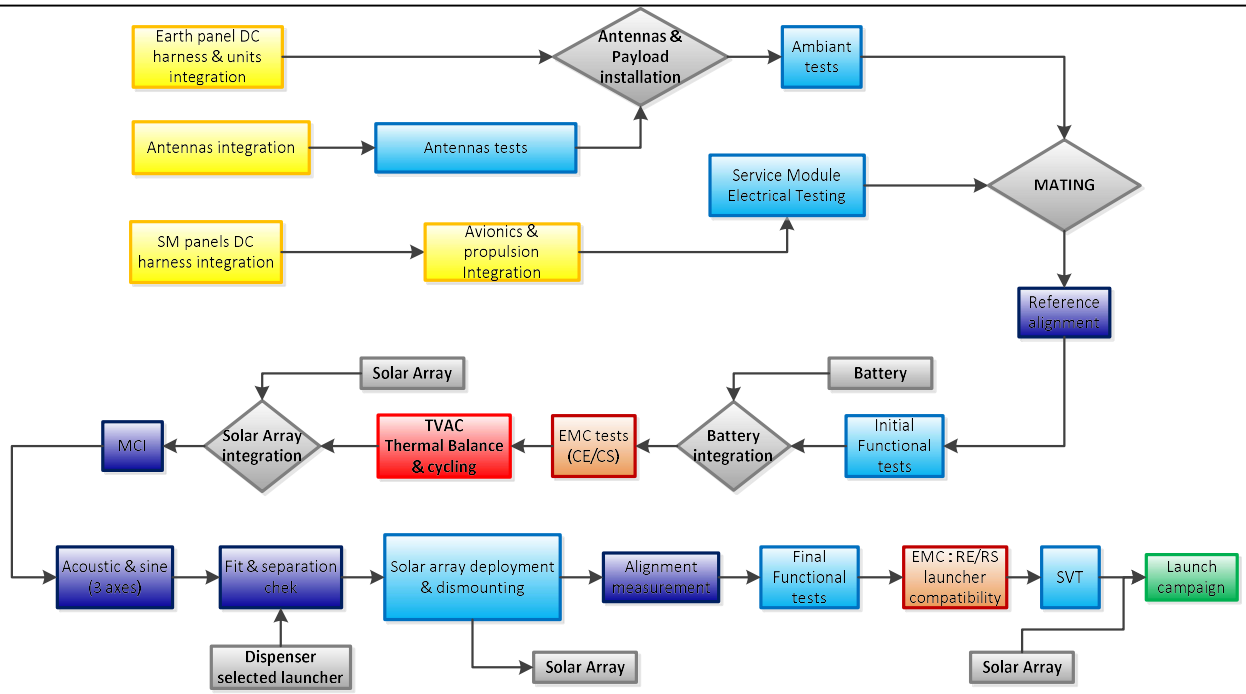
Thermal control is ensured through passive and active means. SSM Radiators enable high rejection capability using heat pipes. Heaters provide temperature control in cold conditions. Passive means such as MLI and paints are used to control temperature gradients to ensure optimal conditions for platform and payload. Thermal design is guaranteed through accurate modeling of in orbit conditions.

Growth potential :

Additionally, ELiTeBus™1000 is compatible with Thales equipment offering among others :

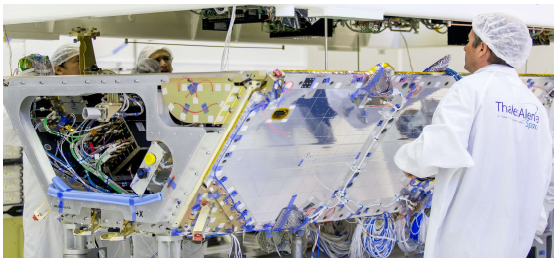
- Electric propulsion system (higher delta-V)
- Additional solar panels (higher Payload P)
- GPS positioning ; state-of-the-art TM/TC security
- Customized I/F plates fitting Payload needs

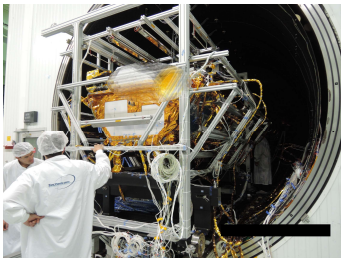
The ELiTeBUS™1000 standard delivery schedule is 30 months for the PFM. Production rate for flight models can be adapted to the needs up to 8 per months. FMs sequence will be lighter with no vibrations nor TVAC, but supported by a comprehensive test plan at unit level.



Test facilities located in both Cannes (France) and Rome (Italy) address all environmental test activities related to space products :

- Mechanical tests : Vibrations, shocks, Acoustics and MOI / CoG measurements
- Radiated tests in anechoic chamber
- Solar Array deployment tests
- Thermal tests under vacuum and at ambient pressure





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